

**MASINDE MULIRO UNIVERSITY
DEPARTMENT OF MEDICAL LABORATORY SCIENCES**

BMH823 PLATELET AND HAEMOSTASIS DISORDERS (4 CREDIT HOURS)

Lecturer: Mr. Paul M. Kosiyo

Course objective: Building on undergraduate of these haematology aspects this course aims at helping the learner to advance knowledge and understanding of platelet and haemostasis pathology and related investigative technology.

Learning Outcomes:

1. Discuss the cellular and molecular aspects of the aetiology, pathogenesis and pathology of the various platelet and haemostasis disorders
2. Discuss the laboratory investigation and related technology for platelet and haemostasis disorders
3. Discuss current advances and emergent issues in platelet and haemostasis pathology and related investigative laboratory technology
4. Perform advanced investigative laboratory procedure applicable in studies of platelet and haemostasis pathology

CONTENTS AND OUTLINE:

Introduction: Review of thrombocytopoiesis, thrombocyte morphology, molecular structure and function—Molecular and biochemical factors and processes; **Cellular and molecular bases of platelet and haemostasis pathology:** Platelet molecules, cellular and molecular regular dysregulation of platelet activities and human disease eg platelet proteins and atherosclerosis; Human platelet toll-like receptors, G-protein signaling cascade and platelet activity in thrombosis and haemostasis; **Review of normal haemostasis:** Coagulation/thrombosis and thrombolysis--Pathways, molecular and cellular mechanisms and platelet role; **Haemostasis disorders:** Aetiologies, pathology and pathogenesis; platelets, cellular and biochemical/molecular factors and mechanisms; **Platelet pathology:** Disorders of thrombopoiesis, Thrombocytopenia; Diseases characterised by local and systemic platelet activation; Pathogenetic roles of platelets beyond thrombosis and haemostasis, including Atherothrombosis; **Platelet and haemostatic disorders in extreme age population:** Paediatric and Geriatric

Week 1: Review of thrombocytopoiesis, thrombocyte morphology

Week 2: Molecular structure and function—Molecular and biochemical factors and processes

Week 2: Cellular and molecular bases of platelet and haemostasis pathology

Week 3: Platelet molecules, cellular and molecular regular dysregulation of platelet activities and human disease e.g. platelet proteins and atherosclerosis;

Week 4: CAT I

Week 5: Human platelet toll-like receptors, G-protein signaling cascade and platelet activity in thrombosis and haemostasis;

Week 6: Review of normal haemostasis: Coagulation/thrombosis and thrombolysis--Pathways, molecular and cellular mechanisms and platelet role.

Week 7: Haemostasis disorders: Aetiologies, pathology and pathogenesis; platelets, cellular and biochemical/molecular factors and mechanisms

Week 8: CAT II

Week 9: Platelet pathology: Disorders of thrombopoiesis

Week 10: Thrombocytopenia; Diseases characterized by local and systemic platelet activation;

Week 11: Pathogenetic roles of platelets beyond thrombosis and haemostasis, including Atherothrombosis;

Lecture 12: Platelet and haemostatic disorders in extreme age population: Paediatric and Geriatric

REFERENCES.

REFERENCES

1. McKenzie, S.B. (2004). Clinical Laboratory Hematology. Prentice-Hall, Inc. ISBN 10: 0130199966, ISBN 13: 9780130199966.
2. Bernadette F. Rodak, George A. Fritsma, Elaine Keohane. (2011). Hematology: Clinical Principles and Applications, 4th Edition. Saunders
3. Williams Hematology, 7th Edition McCraw-Hill.
4. Douglas C. Tkachuk, Jan V. Hirschman. Winthrobe's Atlas of Clinical Hematology
5. Web-based resources, include PubMed, Medline, Hinar

Teaching-Learning Strategies

Lecture, Group work and presentations, E-learning, Reading assignments and Seminars, Self-directed learning, Field visits

ASSESSMENT:

Continuous assessment tests	40%
End of Semester Examination	60%
Total	100%

Cc: The Chairman, Department of Medical Laboratory Sciences